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| Aspirin is used as a first line drug for                       | rheumatoid and osteoarthritis                   |
| Elderly at at greater risk of what side effects with morphine? | urinary retention<br>constipation               |
| Ho is dihydroergotamine administered?                          | IM, SC, or IV at first sign of headache         |
| How is early withdrawal of morphine treated?                   | Clonidine and Benzodiazepines<br>(Diazepam)     |
| How is ergotamine administered?                                | with caffeine as sublingual tab                 |
| How should transdermal fentanyl be disposed?                   | fold adhesive to adhesive and flush down toilet |
| Morphine should not be given to                                | Neonates because they can't conjugate the drug  |
| Resp depression is relatively resistant to                     | narcan reversal                                 |
| Toxic doses of salicylates could cause                         | hyperpyrexia                                    |
| Tramadol has a cross sensitivity with                          | Codeine   |

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| What are considered first choice treatment of acute gouty arthritis? | NSAIDS  |
| What are other side effects of tramadol?                             | resp depression (less than morphine)<br>dizziness/vertigo<br>vomiting<br>constipation<br>urinary retention<br>apnea<br>hallucinations<br>anorexia<br>inc ICP with head trauma   |
| What are the actions of morphine in the periphery?                   | reduce peristalsis-constipation<br>histamine release-urticaria, sweating, vasodilation, bronchoconstriction<br>increase bladder tone<br>decreases ability to void<br>reduce cardiac work<br>bradycardia<br>slight ncrease in glucose  |
| What are the actions of morphine int he CNS?                         | relieve pain by binding to opiod receptors in brain and spinal cord<br>alter perception of pain<br>cause resp depression<br>suppress medulla response to CO2 levels<br>Cause drowsiness, lethargy, and apathy<br>alter mood<br>stimulate CTZ causing nausea/vomiting<br>Miosis<br>Cough suppression |
| What are the advantages f celecoxib over other NSAIDS?               | no effect on platelet aggregation or bleeding time<br>fewer GI ulcers   |
| What are the adverse reactions to dihydroergotamine?                 | GI disturbances, numbness of fingers/toes, muscle pain, pulselessness, weakness in legs, precordial distreaa, prolonged vasospasm leads to gangrene   |
| What are the clinical indications of aspirin?                        | antipyretic<br>analgesic<br>anti-inflammatory<br>antiplatelet   |
| What are the clinical indications of Morphine?                       | pain relief<br>adjunctive treatment of acute CHF, pulmonary edema, or dyspnea<br>ventilator control<br>cough relief<br>pre/post of analgesia<br>treatment of diarrhea   |
| What are the contraindications of NSAIDS?                            | Aspirin allergy<br>GI bleeding<br>decreased renal function  |
| What are the contraindications of tramadol?                          | has caused seizures in animals<br>Patients taking MAOI, antidepressants or antipsychotics have increased risk of seizures   |

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| What are the disadvantages of celecoxib?                      | increased risk of CV events and increased prothrombin in patients taking warfarin; increased risk for upper GI hemorrhage; not indicated for fever  |
| What are the dose implications for morphine?                  | <p>Don't give until cause of pain is known</p> <p>do blood gases to monitor patients on ventilator</p> <p>may depress productive cough</p> <p>delay next dose if patient is confused, respirations slow, low heart rate or hypotension</p> <p>recognize early signs of withdrawal</p> <p>support vital signs and electrolyte balance</p> <p>expect reduced doses of interacting drugs</p> <p>doses in children based on body weight</p> |
| What are the dosing implications for morphine in the elderly? | Should be given reduced doses to avoid sedation, confusion, resp depression, and hypotension.   |
| What are the drug interactions of allopurinol?                | <p>mercaptopurine</p> <p>azathioprine</p>   |
| What are the early signs of aspirin toxicity?                 | <p>dizziness</p> <p>confusion</p> <p>neuromuscular changes</p> <p>vomiting</p> <p>tinnitus</p> <p>decreased hearing</p> <p>headache</p> <p>GI upset</p> <p>drowsiness</p>   |
| What are the early symptoms of morphine withdrawal?           | <p>increased respirations</p> <p>HTN</p> <p>Inc body temp</p> <p>anxiety</p> <p>aggressiveness</p> <p>restlessness</p>  |
| What are the first line drugs for tension headache?           | Acetaminophen or aspirin  |
| What are the indications of acetaminophen?                    | <p>mild pain</p> <p>antipyretic</p>   |
| What are the indications of NSAIDs?                           | mild to moderate pain, fever, inflammatory conditions, gout   |
| What are the interactions of colchicine?                      | fatal toxicity with clarithromycin and grapefruit, 3A4 inhibitors   |

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| What are the late signs and symptoms of aspirin toxicity?      | dyspnea<br>confusion<br>ataxia<br>hyperpyrexia<br>seizures oliguria<br>dec CO <sub>2</sub><br>resp alkalosis<br>dehydration<br>coma<br>ketoacidosis<br>hypoglycemia |
| What are the late signs of morphine withdrawal?                | cold<br>discomfort<br>NVD<br>Gooseflesh<br>Sweating   |
| What are the mixed agonist-antagonists?                        | Nubain<br>antagonist at mu receptor<br>agonist at kappa receptor  |
| What are the morphine like drugs?                              | codeine<br>hydromorphone<br>Hydrocodone   |
| What are the most common side effect of naltrexone?            | GI sympoms<br>lassitude<br>difficulty sleeping<br>anxiety   |
| WHat are the most common side effects of agonists-antagonists? | sedation<br>nausea<br>dizziness<br>insomnia   |
| What are the NSAID interactions?                               | loop diuretics<br>thiazides<br>beta blockers<br>ACE inhibitors  |
| What are the other FDA approved uses of naltrexone?            | treatment of alcoholism<br>appetite suppressant in obesity<br>schizophrenia<br>autistic disorder  |
| What are the partial agonists?                                 | Buprenex at mu receptor<br>Talwin is an agonist at kappa and weak antagonist at mu  |
| What are the pure narcotic antagonists?                        | naloxne<br>naltrexone<br>Revex  |

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| What are the risks of acetaminophen?                         | Nephrotoxicity with huge doses; hepatic injury  |
| What are the side effects of acetaminophen?                  | GI toxicity (Liver Damage)  |
| What are the side effects of allopurinol?                    | GI upset<br>skin rashes<br>peripheral neuritis<br>depression of bone marrow<br>exfoliative dermatitis<br>hepatitis<br>renal toxicity                                      |
| What are the side effects of aspirin?                        | dizziness<br>confusion<br>tinnitus<br>drowsiness<br>headache<br>abnormal bruising/bleeding<br>increased bleeding time<br>wheezing<br>bronchoconstriction<br>edema<br>HTN  |
| What are the side effects of ergotamine?                     | if given with erythromycin- ergotism<br>beta blockers- peripheral ischemia  |
| what are the side effects of hydroxychloroquine?             | GI and neuro, retinal toxicity  |
| What are the side effects of interleukin antagonist kineret? | does-dependent injection site reactions,<br>leukopenia, headache, infections,<br>arthralgias, diarrhea  |
| What are the side effects of normeperidine?                  | dysphoria<br>irritability<br>tremors<br>myoclonus<br>seizures   |
| What are the side effects of NSAIDs?                         | allergy, GI, prothrombotic effect, nephrotoxicity, potential for CV events, MI, stroke, premature closure of ductus arteriosus  |
| What are the side effects of opioid agonist?                 | sedation<br>drowsiness<br>ataxia<br>euphoria<br>hypotension<br>bradycardia<br>dizziness<br>constipation<br>urinary retention<br>n/v<br>increased ADH with decreased urine |

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| What are the side effects of Probenecid and Anturane?      | GI upset, kidney stones, anorexia, N/V, hypersensitivity, worsening of gout on initiation of probenecid  |
| What are the side effects of sumatriptan?                  | coronary vasospasm<br>tingling<br>chest tightness<br>warm sensation/dizziness<br>injection site reaction<br>parasthesias<br>serotonin syndrome |
| What are the side effects of the immunosuppressant DMARDs? | teratogenic, hepatic toxicity, bone marrow suppression, severe GI ulceration, stomatitis, anorexia, nausea, abdominal cramps                   |
| What are the side effects of TNF inhibitors?               | risk for serious bacterial infections  |
| What are the side effects of toradol?                      | cause peptic ulcers<br>renal failure in volume depleted or elderly<br>inhibits platelet function   |
| What are the side effects of prilt?                        | dizziness<br>headache<br>nausea<br>confusion<br>somnolence<br>nystagmus<br>asthenia<br>pain  |
| What are the signs of liver toxicity?                      | cramping, nausea, vomiting, dec urine output, hematuria, upper right abdominal pain, jaundice, anuria, hypoglycemia                            |
| What are the TNF inhibitors?                               | etanercept, remicade, humira   |
| What are the uses for codeine                              | mild to moderate pain<br>antitussive   |
| What are the uses for methadone?                           | detox programs<br>temp maintenance of narcotic addiction<br>opiate withdrawal  |

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| What are the uses of allopurinol?                                | hyperuricemia<br>chronic gouty arthritis<br>doc in patients with impaired renal function   |
| What are the uses of cox-2 inhibitor?                            | pain<br>osteoarthritis<br>RA   |
| What are the uses of colchicine?                                 | acute gout<br>gout prophylaxis   |
| What do high doses of talwin cause?                              | dysphoria<br>hallucinations<br>bizarre dreams<br>depression<br>extreme euphoria  |
| What drugs are used to treat hyperurcemia?                       | Prebenecid<br>Anturane<br>Allopurinol  |
| What drugs does aspirin interact with?                           | glucocorticoids, alcohol, NSAIDS, warfarin, heparin, probenecid, sulfonamides, antidiabetics, phenytoin, valproic acid, methotrexate, ACE inhibitors, caffeine |
| What effect of methadone last longer than the analgesic effects? | Respiratory depressant effects   |
| What is a derivative of methadone?                               | Propoxyphene   |
| What is Ketorolac?   | NSAID rated as a strong analgesic that does not alter gastric motility, adversely affect respiration, or adverse CNS effects or addiction                      |
| What is oxycodone usually paired with?                           | peripheral analgesic   |

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| What is Rituxan?  | Monoclonal antibody  |
| What is the administration of the triptans?                             | SQ for acute attacks   |
| What is the antidote of acetaminophen?                                  | Mucomyst 8-10hrs after overdose  |
| What is the best established choice for prevention of migraine attacks? | beta-blocker<br>TCA<br>valproate<br>gabapentin<br>topiramate   |
| What is the black box warning of methotrexate?                          | deaths have occurred; use only after failure of other agents due to risk of methotrexate induced lung injury |
| What is the black box warning for priligal?                             | severe psychiatric symptoms and neuro impairment during treatment  |
| What is the cause of death with morphine toxicity?                      | resp depression  |
| What is the common use for transdermal fentanyl?                        | chronic pain control<br>terminal cancer pain<br>breakthrough pain  |
| What is the drug of choice for migraine prophylaxis?                    | Propranolol  |
| What is the indication Capsaicin?                                       | Temporary relief of RA, OA, and neuralgias   |



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| What is the indication of hydroxychloroquine?      | chronic discoid and systemic lupus erythematosus and acute or chronic rheumatoid arthritis   |
| What is the MOA of acetaminophen?                  | inhibits prostaglandin synthesis   |
| What is the MOA of Allopurinol?                    | blocks xanthine oxidase  |
| What is the MOA of aspirin?                        | irreversibly inhibits the cyclooxygenase enzymes responsible for platelet aggregation and vasodilation and formation of prostaglandins |
| What is the MOA of colchicine?                     | antiinflammatory; phagocytosis of urate crystals   |
| What is the MOA of DMARDs?                         | Immunosuppressants<br>Tumor Necrosis factor  |
| What is the MOA of ergot alkaloids?                | produces vasoconstriction  |
| What is the MOA of Interleukin Antagonist Kineret? | slows rate of progressive joint erosion  |
| What is the MOA of NSAIDS?                         | cox 2 inhibitor  |
| What is the MOA of opioids?                        | Act on Mu & Kappa Receptors to raise pain threshold and reduce pain perception and emotional reaction to pain                          |

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| What is the MOA of Orencia?                       | inhibits T-cell activation  |
| What is the MOA of Probenecid and Anturane?       | Uricosurics, increase secretion of uric acid  |
| What is the MOA of propranolol?                   | Beta blockers act on 5HT <sub>2</sub> receptors and prevent genesis of nitric oxide |
| What is the MOA of pure narcotic antagonists?     | block opiod receptors and competitively antagonize the effects produced by agonists |
| What is the MOA of Sumatriptan?                   | selective Serotonin 5-HT receptor agonists  |
| What is the MOA of Tramadol?                      | Active metabolite M-1 binds to mu receptor providing analgesia                      |
| What is the prototype cox-2 inhibitor?            | Celecoxib   |
| What is the prototype NSAID?                      | Ibuprofen   |
| What is the prototype of the triptan derivatives? | Sumatriptan   |
| What is the prototype opiod agonist?              | Morphine  |

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| What is the treatment for mild migraine headaches?  | aspirin or naproxen   |
| What is the treatment for sever migraine headaches? | Triptan   |
| What is the treatment of aspirin toxicity?          | forced alkaline diuresis  |
| What is the use of clonidine?                       | continuous epidural for severe cancer pain                            |
| What is the use of dextromethophan?                 | Antitussive   |
| What is the use of Indomethacin?                    | closure of patent ductus in premature infants<br>acute gout           |
| What is the use of naltrexone?                      | prevent readdiction in narcotic addicts                               |
| What is the use of narcan?                          | acutely antagonize opiod induced respiratory depression; short acting |
| What is the use of prialt?                          | intrathecal for severe chronic pain                                   |
| What is the warning for toradol?                    | Use up to 5 days  |

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| What is tramadol?   | Centrally acting analgesic compound   |
| What medications are used for neuropathic pain?                     | tricyclic antidepressants<br>Anticonvulsants  |
| What opioid derivatives are used strictly for antidiarrheal effect? | Diphenoxylate<br>Difenoxin<br>Loperamide  |
| What other drugs are used for migraine prophylaxis?                 | Amitriptyline<br>Valproic acid<br>topiramate<br>metoclopramide  |
| What should be anticipated with opioid therapy?                     | sedation<br>resp depression<br>nausea<br>pruritis<br>urinary retention<br>constipation                                |
| What should be avoided when wearing a transdermal fentanyl patch?   | Heat<br>ketoconazole<br>clarithromycin  |
| When are opioids contraindicated?                                   | closed head injuries<br>poor pulmonary function<br>COPD, cor pulmonale, dec resp reserve<br>impaired hepatic function |
| When are TNF inhibitors used?                                       | Moderate to severe RA and no response to methotrexate   |
| When is aspirin absorption unpredictable?                           | when given rectally   |
| When is tramadol contraindicated?                                   | Labor and delivery  |

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| When is transdermal fentanyl contraindicated?                      | acute postop pain  |
| Which drug is 10X more potent than morphine?                       | Oxymorphone  |
| Which drug is partially metabolized to morphine?                   | Codeine  |
| Which immunosuppressants are used as DMARDs?                       | Methotrexate   |
| Which Opioid has the longest duration of action?                   | Methadone  |
| Who should agonists-antagonists not be given to?                   | Someone getting a pure opioid agonist; causes withdrawal |
| Why do agonists-antagonists have a limited role in pain treatment? | Dose related psychomimetic effects                       |
| Why does morphine accumulate in the fetus                          | ion trapping   |